What is claimed is:

1. A method of inducing apoptosis of a cell, comprising contacting a cell with an agent, wherein (a) the agent inhibits the uptake of glutamine by the cell, and (b) the cell undergoes apoptosis.

2. The method of claim 1, wherein the cell is a carcinoma cell.

3. The method of claim 2, wherein the cell is a hepatocarcinoma cell.

4. The method of claim 2 wherein the carcinoma cell is in a patient.

5. The method of claim 3, wherein the cell is selected from the group consisting of PLC/PRF/5, SK-Hep, Hep3B, Huh-7, FOCUS and HepG2 cell lines.

6. The method of claim 1, wherein said agent modulates a component of a glutamine transport system.

7. The method of claim 6, wherein the component of a glutamine transport system is ATB^0.

8. The method of any one of claims 1 wherein the agent inhibits ATB^0 activity.

9. The method of claim 8 wherein the agent is selected from the group consisting of an antibody, a polynucleotide, and an amino acid analog.

10. The method of claim 8 wherein the agent is a polynucleotide that inhibits the expression of ATB^0.

11. The method of claim 10 wherein the polynucleotide comprises a sequence set forth in SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, or SEQ ID NO:6.

12. The method of claim 10 wherein the polynucleotide consists essentially of a sequence set forth in SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, or SEQ ID NO:6.

13. The method of claim 11 wherein the polynucleotide comprises a sequence as set forth in SEQ ID NO:3.

14. The method of claim 12 wherein the polynucleotide consists essentially of a sequence as set forth in SEQ ID NO:3.

15. A method of inducing apoptosis of a cell, comprising contacting a cell with a vector which comprises a polynucleotide that encodes a polynucleotide which reduces the expression of an ATB^0 gene product, wherein (a) the vector enters the cell, (b) the polynucleotide is produced in the cell

16. The method of claim 15 wherein the polynucleotide comprises a sequence of at least 10 contiguous nucleotides from SEQ ID NO:1.

17. The method of claim 16 wherein the polynucleotide comprises a sequence as set forth in any one of SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5 and SEQ ID NO:6.

18. The method of claim 16 wherein the polynucleotide consists essentially of a sequence as set forth in any one of SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5 and SEQ ID NO:6.

19. The method of claim 15 wherein the polynucleotide consists essentially of SEQ ID NO:3.

20. The method of any one of claims 19 wherein the cell is a hepatocarcinoma cell.

21. The method of claim 20 wherein the hepatocarcinoma cell is in a patient.

22. The method of claim 15 wherein the vector is an adenovirus vector.

23. The method of claim 15 wherein the vector is an adenovirus vector.

24. A method of treating an hepatocarcinoma comprising administering a therapeutically effective amount of an agent to an individual, wherein (a) the agent contacts a hepatoma cell in the individual, (b) the agent selectively inhibits the activity of an ATB^0 of the hepatoma cell, (c) glutamine uptake by the hepatoma cell is significantly reduced, and (d) the hepatoma cell undergoes apoptosis.

25. The method of claim 24 wherein the agent comprises (a) a polynucleotide having a sequence set forth in any one of SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, or SEQ ID NO:6, wherein the polynucleotide is operably linked to a promoter in an adenovirus vector.

26. A method of diagnosing cancer in a patient comprising obtaining a sample from the patient, determining the amount of ATB^0 in the sample, and predicting whether a carcinoma is in the patient based upon a higher than normal level of ATB^0 in the sample.

27. The method of claim 26 wherein the carcinoma is a hepatoma.